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THE UNIVERSITY OF ALBERTA

AFFECTIVE LEARNER COMPETENCIES IN AUTOMOTIVES

BY

ERICH ERWIN WILLUHN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF EDUCATION

IN

VOCATIONAL EDUCATION

DEPARTMENT OF INDUSTRIAL AND VOCATIONAL EDUCATION

EDMONTON, ALBERTA

SPRING, 1986

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FACULTY OF GRADUATE STUDIES AND RESEARCH

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DEDICATION

To my wife Lois, for her support and encouragement, my daughter Heidi, for her love and understanding and, my son Jeremy, for the time I missed with him.

ABSTRACT

The purpose of this study was to compare the attitudes towards work of high school students taking vocational classes with apprentices attending a post-secondary institution. To accomplish this task the attitudes toward work of high school students taking automotives were compared to apprentices in the automotive trade. It was assumed that because the high school students and the automotive apprentices differed in age and amount of work experience a significant difference in attitude toward work should exist between the two groups. Two hypotheses were developed for this study, namely that there are no differences in each of the affective work competencies of the high school students compared to the automotive apprentices and, there are no differences in the total affective work competencies of the two groups.

A questionnaire using the fifteen affective work competencies identified by Beach (1979) was developed to test for the attitudes toward work that the high school students possessed. Statements were written to identify each cluster. The respondents were asked to agree or disagree to the statements and, the results analyzed to see what differences in attitude toward work existed between automotive students and apprentices.

A total of two hundred and sixty five respondents

participated in the study. The study groups consisted of, 183 high school students enrolled in Automotives 22, 32, and eighty-two third and fourth year apprentices. From the data it was found that there were differences in some of the affective work competencies of the high school students enrolled in automotives and the automotive apprentices. However, there was no difference found in the total affective competencies of both groups.

As a result of the findings it was recommended that at the high school level an effort be made to teach students affective work competencies, and that students be provided with the opportunity to participate in some form of work experience. It was further recommended that instructors devise instruments to identify students' attitude toward work, that these instruments be used to identify the affective work competencies of students before entering high school; that the change in affective competencies be monitored, that industry use the instrument to identify attitudes toward work and, that adequate time be spent at the post-secondary level in teaching affective work competencies.

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To my parents, I give my sincere and warmest thanks for instilling in me the knowledge and meaning of work.

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CHAPTER I

INTRODUCTION

Introduction to the Problem

> Work is an essential part of a man's life since it is that aspect of his life which gives him status and binds him to society (Brown, 1958, p. 187).

Furthermore, Brown (1958) saw work performance as a function of the worker's attitude toward work and his co-workers. The attitudes a person takes to the working environment will affect how well he does on the job. Miller and Usoro (1981) stated that "desirable work attitudes are among the most important factors of success in the world of work" (p. 35). This concept is supported by researchers such as McGarvey and Vickery (1983) who found that skill and experience are no longer a guarantee to job security. Studies conducted by Beach and Gedeon (1980) found that job survival was dependent upon the work habits, values and attitudes the worker brings to the work place. Therefore, the teaching of affective skills, those dealing with attitudes, opinions, values, and work habits, is becoming important. France and Mitchell (1982) support and elaborate on this concept by

identifying a need for industrial education to place more emphasis on enhancing student's awareness of the attitudes toward work which employers expect them to display.

Statement of the Problem

In a public opinion poll conducted by Gallup for the Canadian Education Association in March and April of 1984, schools were given the highest rating for buildings and equipment, curriculum and instructional materials and the lowest rating for preparing students for work (Edmonton Journal, Friday, September 7, 1984). This survey indicated that education was failing in preparing students for work; furthermore, it identified a public need for education to spend more time teaching students job survival skills. The Department of Education for the Province of Alberta has recognized this public need. It has identified as one of its goal statements for schooling the desirability to provide programs and activities in order that students

> acquire knowledge and develop skills, attitudes, and habits required to respond to the opportunities and expectations of the world of work (Proposals for Amending the School Act and Regulated Legislation, discussion paper. Alberta Education, 1985, p. 53).

A study commissioned by the Minister's Advisory Committee on Student Achievement, Alberta Education; Maguire et al. (1979) stated

> Little work seems to have been done directly on high school students' perceptions and anticipations about some aspects of the world of work in spite of the number of occupational preference scales and work value scales that exist. Specifically, little has been done on the perceptions of the adequacy of training (p. 5).

In other words, a great deal of information has been presented to students so that they may make a career choice, but little work has been done about the work attitudes students have. Maguire et al. (1979) have indicated that there is a need to investigate the perceptions of students' attitudes toward work.

These statements would indicate that the development of attitudes conducive to the expectations of the world of work has been identified as a goal for schooling; however most of the emphasis that educators seem to place in technical and vocational education is in the development of a student's cognitive and psychomotor skills with little attention to the affective skills (Miller and Usoro, 1981, p. 36). Perhaps the reason for the emphasis in teaching cognitive and psychomotor skills lies in the fact that these skills can be easily taught, and identified. On the other hand, the teaching of affective competencies involves the use of indirect instructional methodologies, and the resulting

attitudes a person develops about a subject are not easily ascertained. As a result there exists insufficient information about the perceived attitudes vocational high school students have toward work.

Purpose of the Study

The purpose of this study was to compare the attitudes toward work of high school students enrolled in vocational classes to those of apprentices attending a post-secondary institution for technical upgrading. For this study the attitudes toward work of high school students enrolled in automotives were compared to the attitudes toward work of automotive apprentices. In order to do this comparative study the following questions were formulated:

1. What are the attitudes toward work held by the high school students which were similar to those held by apprentices?
2. What are the attitudes toward work held by the high school students which were different than those held by apprentices?

Significance of the Study

Researchers have indicated that in order to be and stay employable workers must possess positive work attitudes. The attitudes that employees have will determine to a large extent their success at the work place. Studies conducted by Burns (1973) in the industrial setting indicated that negative personal traits accounted for lack of progress and advancement in the work place. Wilson (1973) observed that more workers lost their jobs because of their personal qualities than for their general work duties. Beach and Gedeon (1980) analyzed the performance appraisal forms relating to production, technical competence, and workers' performance at 3M Company. The researchers found that one-third of employee evaluation focused on personal qualities such as co-operation, motivation, stability and maturity. Another third focused on productivity and the final third was an appraisal of the methods used by the worker to accomplish the task. These studies have shown that employee attitudes are considered as important as productive skills and that it is the employee's attitude toward work that determines his success in the work place.

This study focused on students taking automotives because, even though automotives is not the only vocational program offered at the high school level, the automotive students would demonstrate attitudes similar to those of

other vocational high school students. Results from the work conducted by Schoonmaker (1984) found that students who were enrolled in industrial education classes had different attitudes to the value of these classes than those students which were not enrolled. Work conducted by Maguire et al. (1979) indicated that students with technical training as compared to those with none, held differing attitudes about their preparation for work. These findings indicated that students with some vocational training had parallel views about the programs which differed from those students not having any experience. Furthermore, it was expected that the older and more experienced automotive apprentices would have attitudes different from their high school counterparts and that the attitudes held by the apprentices would more closely represent those of industry. Several researchers such as Maguire et al. (1979), Miller and Usoro (1981), Pautler and Lewko (1985) found that differences in attitude toward work exist depending upon a person's age and amount of work experience. With this in mind, a pilot study using the affective competency clusters identified by Beach (1979) attempted to determine if the attitudes of high school students enrolled in automotives and automotive mechanics were significantly different. The results found meaningful differences in several affective work competencies. In the present study the span in age and amount of work experience are not as drastic as in the pilot study. However,

differences in age and years of practical work between the students and the apprentices still exist, therefore, a significant difference in the affective competencies of the two study groups is expected. If there are no significant differences in the high school students' attitude toward work compared to the apprentices, it can be assumed that the high school vocational programs help develop attitudes similar to those held in industry. On the other hand, if differences are found in the affective work competencies between the two groups these differences should be investigated. Furthermore, recommendations should be made in order that secondary education meet one of its objectives, by helping students develop attitudes which are expected of them in the world of work.

CHAPTER II

SURVEY of RELATED LITERATURE

Review of Related Literature

The purpose of this section is to present a review of the literature which relates to this study. The literature review will describe what an attitude is, and the measurement of an attitude. Furthermore, the review will discuss the two factors which were considered contributing to a difference in attitude, that of age and amount of work experience. The literature review will also outline the affective competency clusters used in the pilot and current study. This information was important in understanding the type of statements to write in the development of the questionnaire for the initial and the present study. In conclusion, a brief description of the pilot study is presented in order that the reader understand the preliminary work which lead to this study.

Description of an attitude. Most researchers have similar descriptions of what an attitude is. In their discussion of attitudes Thurstone and Chave (1929) described an attitude as

> the sum total of man's inclinations and feelings, prejudice or bias, perceived notions, ideas, fears, threats, and convictions about any specific topic. ... It is admittedly a subjective and personal affair (p. 6).

Oppenheim (1966) indicated that an attitude is a state of readiness to act or react in a certain manner when confronted with certain stimuli (p. 104). According to Triandis (1971) attitudes are ideas charged with emotion (p. 2). Fishbein and Ajzen (1975) described an attitude as a learned response with which a person reacts in a consistently favorable or unfavorable manner with respect to a given object. Fishbein (1967) elaborated his description of an attitude by pointing out that attitudes are relatively enduring (p. 389).

A succinct description of an attitude which summarizes those characteristics identified by the previous researchers was given by Shaw and Wright (1967):

1. Attitudes are based on evaluating concepts regarding characteristics of the referent object and give rise to motivated behavior.
2. Attitudes are constructed as varying in quality and intensity (or strength) on a continuum from positive through neutral to negative.

3. Attitudes are learned rather than being innate or a result of constitutional development and maturation.
4. Attitudes have specific social referent or specific classes thereof.
5. Attitudes possess varying degrees of interrelatedness to one another.
6. Attitudes are relatively stable and enduring (pp. 6-9).

Measurement of an attitude. The measurement of an attitude is a difficult assignment and simply assigning a number to represent the degree of positive or negative response to a social value may not always be a true indicator of a person's attitude. To help measure an attitude Thurstone and Chave (1929) stated that opinions or other forms of actions may be used as indicators of an attitude (p. 7-8). Thurstone and Chave (1929) further commented that even if a measure for an attitude is obtained, that this may not be a true predictor of a person's real attitude since the respondent may have intentionally distorted the results (p. 9). If the results were distorted, this then would be a measure of how the subject wanted others to perceive his attitude. In the development of the attitudes toward work questionnaire, Maguire et al. (1979) stated:

> Moving from the values end toward the opinion end of the continuum, we encounter an area where attitudes begin to blend into opinions. This is the area in which a person's perception of self in relation to the world of work is important (p. 4).

In other words the attitudes a person has may be expressed by the opinions that he holds about certain topics.

Differences in attitude. Research has shown that differences in attitudes toward work depend upon a person's age, cultural background, education level, occupational orientation, sex, social class, geographic location, and work experience. This study was concerned with identifying the affective work competencies of high school students enrolled in automotives and comparing them to those held by automotive apprentices. It was hoped that the difference in age and work experience would account for a significant difference in attitude between the two groups. The following part of the literature review will therefore concern itself with age and work experience and how these two factors can account for differences in attitude.

Two studies, one conducted in a positive economic environment and the other in a more negative environment, found a significant difference in attitude toward work between groups of different age. A study conducted in a positive economic climate by Maguire et al. (1979) in the development of an attitudes towards work questionnaire found that for items where knowledge and experience were required, high school students were more definite about their opinions, had a more realistic view about the world of work, and a less positive view about their preparation for work

than their junior high school counterparts. Similarly, a study conducted by Pautler and Lewko (1985) in a negative economic climate using the Attitudes Toward Work Questionnaire developed by Maguire et al. (1979) found similar results. The grade twelve students were more critical than the junior high school students of their preparation by the school for the world of work. The grade twelve students felt that getting a job was their responsibility, and they were more self-confident. On the other hand, the grade nine students tended to have a lazier attitude, and appeared less confident about getting a job. The results of the work conducted by Maguire et al. (1979) and Pautler and Lewko (1985) would indicate that even though the economic conditions differed, students who were older had different opinions about the world of work and their preparation for work than their younger counterparts.

The amount of work experience a person has will effect his attitude toward work. When high school students were surveyed, Maguire et al. (1979) found that those students with previous full-time jobs rated their preparation for work lower than those students without any previous work background. Furthermore when the students without any previous work experience were asked to comment on employer characteristics, they indicated that because of their lack of work background they felt unqualified to make judgments in this area. Results from students who were working but

now attending a post secondary institute for technical upgrading indicated that, they appeared to be more ambitious than their school counterparts and they attributed job success to factors beyond their control. This would indicate that work experience influenced the students' attitudes toward work and the attitudes of those students with more experience compared to those with little or no work experience were quite different.

A study of high school students, technical students, and employers conducted by Miller and Usoro (1981) using the Affective Work Competencies Inventory developed by Beach (1979) found that employers attached a higher level of importance to various aspects of affective work behavior than the students expected to display. The employers expected the students to be more ambitious, cooperative, adaptable, accurate, pleasant, able to follow directions, careful, considerate, emotionally stable, neat, efficient, and dedicated. This study indicated that work experience and position of employment, influenced not only the attitudes about work, but also the expectations an employer has of an employee. Maguire et al. (1979), Miller and Usoro (1981), Pautler and Lewko (1985) have found that age and work experience affect a person's work attitude.

A pilot study conducted by the researcher sought to identify whether a significant difference existed in the attitudes toward work of high school students taking automotives and automotive mechanics. The pilot study used the Affective Work Competency Clusters identified by Beach (1979) in the development of the instrument. The following is a description of those affective work competency clusters.

Affective work competency clusters. Research conducted by Kazanas (1978) attempted to identify the work habits, values and attitudes which were considered desirable and important by employers and educators. Kazanas, using computers to search related literature identified 59 specific work competencies (see Table 1).

Table 1

Desirable employee characteristics listed by industry and educators

1. Punctual
2. Cooperative
3. Capable
4. Follows directions
5. Responsible
6. Emotionally stable
7. Initiative
8. Honest
9. Dependable
10. Helpful
11. Loyal
12. Adaptable
13. Efficient
14. Ambitious
15. Quality of work
16. Dedicated
17. Reliable
18. Accurate
19. Persevering
20. Judgment
21. Concentrating
22. Careful
23. Cheerful
24. Enthusiastic
25. Independent
26. Quantity of work
27. Intelligent
28. Personal appearance
29. Alert
30. Devoted
31. Recognition
32. Leadership potential
33. Courteous
34. Pleasant
35. Responsive
36. Personality
37. Endurance
38. Tolerance
39. Shyness
40. Tender-mindedness
41. Overall performance
42. Healthy
43. Creative
44. Considerate
45. Speedy
46. Influence
47. Orderly
48. Patient
49. Poise
50. Interested
51. Curious
52. Forceful
53. Active
54. Aware
55. Resourceful
56. Appreciative
57. Perceptive
58. Achievement
59. Friendly

Characteristics 1 through 31 were listed by both industry and educators, 32 through 41 were listed by industry, 42 through 59 were listed by educators.

Beach (1979) classified the 59 affective competencies according to their common elements (see Table 2).

Table 2

Clustered Affective Competencies (Beach 1979)

Cluster	01. Ambitious
Cluster	02. Co-operative/Helpful
Cluster	03. Adaptable/Resourceful
Cluster	04. Considerate/Courteous
Cluster	05. Independent/Initiating
Cluster	06. Accurate/Quality of Work
Cluster	07. Careful/Alert/Perceptive
Cluster	08. Pleasant/Friendly/Cheerful
Cluster	09. Responsive/Follows Directions
Cluster	10. Emotionally Stable/Judging/Poised
Cluster	11. Persevering/Patient/Enduring/Tolerant
Cluster	12. Neat/Orderly/Personal Appearance/Manner
Cluster	13. Dependable/Punctual/Reliable/Responsible
Cluster	14. Efficient/Quality of Work/Achieving/Speedy
Cluster	15. Dedicated/Devoted/Honest/Loyal/Conscientious

The combined Affective Competency Clusters identified by Beach (1979), Table 2, were used as headings in the development of the instrument for the pilot study.

Pilot study. Various research studies have indicated that age and experience accounted for differences in a person's attitude. With this in mind it was expected that the automotive mechanics would have different attitudes toward work than the high school students. The subjects for the pilot study consisted of 60 high school students and 20 automotive mechanics. The high school students' average age was fifteen and they were enrolled in the first or second year of high school automotives. The mechanics average age was forty and they had more than six years of work experience in the trade. Statements were written for each

Affective Competency Cluster. For example, a statement for Cluster 01. Ambitious read as follows: I am willing to do more work even if I do not receive more pay. The subjects were asked to either agree of disagree with such a statement. Chi Square was used in the analysis to identify if a significant difference existed between the two groups. The results showed a significant difference between the two groups at the .05 level of significance for the following clusters:

Cluster 05. Independent/Initiating
Cluster 11. Persevering/Patient/Enduring/Tolerant
Cluster 13. Dependable/Punctual/Reliable/Responsible

When the level of significance was lowered to .1 the following clusters were also included.

Cluster 01. Ambitious
Cluster 14. Efficient/Quality of Work/Achieving/Speedy
Cluster 15. Dedicated/Devoted/Honest/Loyal/Conscientious

The results of the pilot study indicated that in the majority, 60 percent of the affective competency clusters, there was little difference in attitude toward work between the automotive students and the automotive mechanics. However, significant differences did exist for some of the clusters. These differences in attitudes toward work were attributed to the variance in age and work experience of the students as compared to the mechanics. In the present study

the difference in age and amount of work experience between the two study groups still exists therefore, there should be a significant difference in attitude toward work between high school students enrolled in automotives and the automotive apprentices.

Summary. The literature review has shown that attitudes are personal and subjective. Attitudes seem to be enduring; they are developed through life experiences and become integrated as part of our nature. Attitudes are expressed by the feelings and opinions we have; our actions indicate to others those feelings and opinions. It is difficult to assign a measurement value to a particular attitude. Rather, when measuring an attitude, the degree of favorableness or unfavorableness one has toward an object or situation is identified. Furthermore, people may differ in their attitudes about similar topics. These differences in attitude may be attributed to many factors of which age and work experience are two.

A pilot study to investigate if a difference in attitude existed between vocational high school students taking automotives and automotive mechanics found significant differences in the following affective competencies:

Cluster 01. Ambitious
Cluster 05. Independent/Initiating
Cluster 11. Persevering/Patient/Enduring/Tolerant
Cluster 13. Dependable/Punctual/Reliable/Responsible
Cluster 14. Efficient/Quality of Work/Achieving/Speedy
Cluster 15. Dedicated/Devoted/Honest/Loyal/Conscientious

The results of the initial investigation indicated that there were differences in certain affective work competencies possessed by vocational high school students and automotive mechanics. The present study sought to identify if differences in attitudes toward work existed between high school students taking automotives and automotive apprentices.

CHAPTER III

METHODOLOGY

Hypothesis

The purpose of this study was to compare the attitudes toward work held by high school students enrolled in vocational education classes to those of apprentices attending a post-secondary institution for technical upgrading. In this study, the attitudes toward work of high school students enrolled in automotives were compared to those of automotive apprentices. To achieve this purpose the following questions were formulated:

1. What attitudes toward work do high school students enrolled in automotives have that are similar to automotive apprentices?
2. What attitudes toward work do high school students enrolled in automotives have that are dissimilar to automotive apprentices?

From these questions the following research hypothesis was constructed: There would be a significant difference between the perceived affective work competencies of high school students taking automotives and automotive apprentices.

The research hypothesis was tested as data related to the following null hypotheses were subjected to statistical analysis.

HO 1: There is no significant difference among the t-test scores for each of the affective work competencies between the high school students enrolled in automotives and the automotive apprentices.

HO 2: There is no significant difference among the total t-test scores for the affective work competencies between the high school students enrolled in automotives and the automotive apprentices.

Development of the Instrument

The results of a pilot study indicated that differences in the affective work competencies exist between automotive mechanics and high school students taking automotives.

The differences existed in the following competencies:

Cluster 01. Ambitious
Cluster 05. Independent/Initiating
Cluster 11. Persevering/Patient/Enduring/Tolerant
Cluster 13. Dependable/Punctual/Reliable/Responsible
Cluster 14. Efficient/Quality of Work/Achieving/Speedy
Cluster 15. Dedicated/Devoted/Honest/Loyal/Conscientious

To compare the affective work competencies that high school students taking automotives had to those of automotive apprentices, the questionnaire developed in the pilot study was rewritten (see Appendix A for pilot study questionnaire). The following is a description of the procedures used in the development of the new instrument.

The Affective Work Competency Clusters identified by Beach (1979) were written on a chalkboard. Twenty automotive high school students were asked to describe the characteristics of someone who they felt exhibited the affective work competency cluster. As an example, for Cluster 01. Ambitious, the phrases used to describe someone with this affective characteristic were:

1. Willing to work.
2. Willing to do extra work (see Appendix B for affective competencies and descriptors).

These phrases were written on the chalk board beside each cluster. A discussion between the researcher and students followed to determine the appropriateness of each of the

phrases and its relationship to the affective competency cluster. The resulting cluster descriptors were used to construct positive and negative statements for each affective work competency. As an example, a positive statement describing someone with ambitious characteristics read: I like to look for extra work when there's nothing to do in the shop. On the other hand the same characteristic having a negative description read: I am willing to do extra work, but only for more pay. The positive and negative statements for each affective competency cluster were written on 4 x 8-inch cards. Each card contained one statement and everyone of the twenty high school students was given a complete set of positive and negative statements for all fifteen affective competency clusters (see Appendix C for affective competency clusters, positive and negative statements). The students were asked to sort the statements as to whether they felt the statements were either positive, negative, or neutral. The statements perceived as neutral were eliminated and only those statements where there was a 75% agreement as to it being either a positive or negative statement were retained. These statements were assigned random numbers and written in the form of a preliminary questionnaire. This questionnaire was then administered to five randomly selected automotives high school students. The students were asked to read and answer the questionnaire. Furthermore, the students were asked to

identify all of the statements which they had difficulty understanding. After the administration of the questionnaire, the five automotive students along with the researcher analyzed the instrument by discussing all statements which were not clear in meaning, or poorly written, and any other comments that the students had which were pertinent to the instrument. All of the instrument weaknesses identified by the students were corrected. The questionnaire was then distributed to three industrial education instructors interested in the study. The instructors were asked to analyze the instrument for grammatical and instructional errors, and for the clarity of the statements as to meaning. After discussion with the researcher, revisions were made resulting in a questionnaire containing 47 statements reflecting both positive and negative affective work attitudes (see Appendix D for original questionnaire).

Revision of the Instrument

The original questionnaire was submitted to the University of Alberta, Cooperative Activities Program, whose responsibility is to coordinate, control, and assist in the facilitation of university initiated projects which involve the Edmonton Public School Board (EPSB) and the Northern Alberta Institute of Technology (NAIT). The original

instrument as presented received approval from the Edmonton Public School Board (see Appendix E for approval letter EPSB), but it did not receive approval from the Northern Alberta Institute of Technology, Research and Academic Development Department. The Director of Research and Academic Development for NAIT informed the researcher that because the study involved apprentices, approval for the study had to come not only from NAIT, but also from the Department of Manpower, Apprenticeship and Trade Certification. Furthermore, the Northern Alberta Institute of Technology was contracted to provide the apprentices with 1800 minutes of instruction and having the apprentices answer 47 statements would take too much time. Therefore, in order to grant permission to administer the questionnaire the number of statements would have too be decreased. Since the research project involved gathering data from apprentices, the researcher was obliged to meet these requests. The questionnaire was revised from 47 to 29 statements. Eighteen statements were randomly eliminated however, the remaining 29 items reflected all of the fifteen affective competency clusters. It was further requested that the apprentices be allowed to respond directly on the instrument rather than fill in the optical score sheets. The researcher met these requests and the revised instrument received approval from the Northern Alberta Institute of Technology and the Department of Manpower, Apprenticeship

and Trade Certification (see Appendix F for revised apprentice questionnaire). A similar instrument was developed for the high school students but in order to provide for a comparative study the statements used reflected either the respondent's learning (students) or working (apprentices) situation. As an example, for Cluster 02. Co-co-operative/Helpful, statement number seven for the apprentices' questionnaire reads: I don't like helping other mechanics with their work when they're busy and I'm not. On the other hand, statement number seven for the students' questionnaire reads: I don't like helping others with their work when they're busy and I'm not. (see Appendix G revised student questionnaire)

Sample

The sample consisted of those students taking Automotives 22, 32, who were attending an Edmonton Public high school and those third and fourth year automotive apprentices attending the Northern Alberta Institute of Technology. A total of 265 respondents participated in this study: of these, 183 were enrolled in Automotives 22, 32 and 82 were enrolled as third and fourth year apprentices attending NAIT. The majority of high school students ranged in age from 16 to 19 years, while the apprentices were 22 years of age and older. The apprentices had a minimum of

four years of work experience after leaving school while the majority of the high school students had little or no work experience.

Limitations of the Study

The study was limited to the following composite high schools which offer either or both Automotives 22, 32, and are part of the Edmonton Public School System. These schools included Eastglen, Harry Ainlay, Jasper Place, J. Percy Page, M.E.LaZerte, and Victoria Composite High Schools. The study was limited to those high school students enrolled in Automotives 22 and 32 during the 1984 - 1985 school year and to the third and fourth year automotive apprentices attending the Northern Alberta Institute of Technology during the 1985 February term. The study was further limited to those affective competency descriptors which were listed by the high school students taking automotives. These descriptors were used to indicate if there was a significant difference in attitude toward work between the high school students taking automotives and the automotive apprentices. The final limitation of this study are the clusters which were analyzed. Because eighteen of the statements had to be eliminated some of the affective competencies were not tested. Table 3 is a list of the complete affective competency clusters; in parenthesis are

the affective competencies which were not tested.

Table 3

Tested Affective Competencies

Cluster 01. Ambitious
Cluster 02. Co-operative/Helpful
Cluster 03. Adaptable (Resourceful)
Cluster 04. Considerate/Courteous
Cluster 05. Independent/Initiating
Cluster 06. Accurate/Quality of Work
Cluster 07. Careful/Alert (Perceptive)
Cluster 08. Pleasant/Friendly/Cheerful
Cluster 09. Follows Directions (Responsive)
Cluster 10. Emotionally Stable (Judging/Poised)
Cluster 11. Persevering (Patient/Enduring/Tolerant)
Cluster 12. Personal Appearance (Neat/Orderly/Manner)
Cluster 13. Punctual (Reliable/Responsible/Dependable)
Cluster 14. Quality of Work/Achieving/Speedy (Efficient)
Cluster 15. Dedicated/Devoted/Honest/Conscientious (Loyal)

Collection of Data

The principals of the high schools participating in the study were contacted to ask their permission for the administration of the questionnaire. After their consent was given, the researcher contacted the automotive instructors involved in the study. The purpose of the study was explained to the instructors and their co-operation was asked. None of the instructors refused to administer the instrument. At this time verbal instructions were given as to the administration of the questionnaire, and mailing and return dates were established. The mailed questionnaires were identified as to school and instructor.

The questionnaires included written instructions regarding the administration and return of the instrument as well as the optical score sheets needed for answers (see Appendix H for questionnaire instructions and optical score sheet).

The questionnaires which were to be answered by the apprentices were delivered to the Automotive Department chairman for the Northern Alberta Institute of Technology. The instructions for the administration of the instrument were explained to the chairman. The chairman gave each third and fourth year instructor enough copies of the instrument for the number of apprentices in each class. Due to the limited time allowed for the apprentices to answer the questionnaire, the apprentices answered directly on the questionnaire. These responses were later transferred to optical score sheets for analysis.

The students and apprentices participating in the study were asked to respond to all of the questionnaire statements. Any of the questionnaires which did not have a response to all statements dealing with the affective competencies were not included in the data analysis. However, if the subjects responded to the affective competency statements but did not complete the demographic information, their responses remained as part of the analysis.

CHAPTER IV

ANALYSIS OF THE DATA

Scoring Procedure for Questionnaire

The subjects were asked to respond to the questionnaire by either agreeing or disagreeing with each statement. Each of the statements reflected an affective work attitude. The statements were written either in positive or negative terms. The subjects received one point for responding "agree" to the positive statements: 1, 2, 6, 10, 13, 14, 16, 17, 20, 23, 24, 26, 27, 28, 29, and another point for responding "disagree" to the negative statements: 3, 4, 5, 7, 8, 9, 11, 12, 15, 18, 19, 21, 22, 25. A respondent could score as high as 29. These scores were tabulated and comparisons were made between the apprentices and the high school students. A t-test was used in the analysis to determine if there were significant differences in the attitude toward work between the automotive apprentices and the high school students taking automotives.

The results from the analysis to test the first null hypothesis that there are no significant differences among the t-test scores for each of the affective work

competencies between the high school students enrolled in automotives and the automotive apprentices are shown in tables 4 to 18. These tables contain the clustered affective competencies, the statements used to describe each affective competency cluster, the mean, the standard deviation, the percentage of respondents agreeing to each statement, the t value, and the 2-tail probability. In the tables, the percentage of responses agreeing is shown rather than the number of observed frequencies. Since the study groups did not have equal numbers, listing the percentage agreeing aided in the interpretation of the results. Table 19 summarizes the affective competencies, shows the two-tail probability, and indicates the decision of whether to accept or fail to accept the first null hypothesis. The results from the analysis to test the second null hypothesis that there are no significant differences among the total scores for the affective work competencies between the high school students enrolled in automotives and the automotive apprentices is show in table 20.

Table 4

t-test Results
Affective Work Competency Cluster 01
Ambitious

Statement # 11. (Negative statement) I am willing to do extra work, but only for more pay.

Statement # 16. (Positive statement) I like to look for extra work when there's nothing to do in the shop.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A #11	%A #16	t	2-t.P.
						.66	.509
Automotives 22/32	183	1.39	.67	42.1	82.0		
Apprentices 3/4th year	82	1.34	.61	54.9	89.0		

The results indicated that there was no significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance.

Table 5

t-test Results
Affective Work Competency Cluster 02
Co-operative/Helpful

Item # 7. (Negative statement) I don't like helping other mechanics with their work when they're busy and I'm not.

Item # 27. (Positive statement) I don't mind volunteering for overtime if asked to.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A # 7	%A #27	t	2-t.P.
						2.31	.022
Automotives 22/32	183	1.65	.58	12.6	77.6		
Apprentices 3/4th year	82	1.81	.44	4.9	86.6		

The results indicated that there was a significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. The apprentices' frequency of responses to both statements indicated a more positive attitude toward this work competency cluster than that of the students.

Table 6

t-test Results
Affective Work Competency Cluster 03
Adaptable

Item # 26. (Positive) I like to learn new skills at work so I can do different types of jobs.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A #26	t	2-t.P.
					.76	.447
Automotives 22/32	183	.95	.20	95.6		
Apprentices 3/4th year	82	.97	.15	97.6		

The results indicated that there was no significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. Both groups had a high percentage of agreement with statement 26.

Table 7

t-test Results
Affective Work Competency Cluster 04
Considerate/Courteous

Item # 15. (Negative statement) Customers don't know what they are talking about.

Item # 20. (Positive statement) I like helping the other mechanics in the shop.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A #15	%A #20	t	2-t.P.
Automotives 22/32	183	1.61	.58	29.0	90.7	2.14	.033
Apprentices 3/4th year	82	1.45	.57	47.6	92.7		

The results indicated that there was a significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. The frequency of responses by the apprentices compared to the frequency of the students to statement 15 indicated that the apprentices had by far a more negative attitude toward this competency cluster than had the high school students.

Table 8

t-test Results
Affective Work Competency Cluster 05
Independent/Initiating

Item # 3. (Negative statement) It's not part of my job to go look for work when I'm not busy.

Item # 17. (Positive statement) I like to start as soon as I get to work.

Item # 22. (Negative statement) Figuring out how to repair the customer's complaint about his vehicle is not my job.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A # 3	%A #17	%A #22	t	2-t.P.
Automotives 22/32	183	2.54	.68	16.4	77.0	6.0	2.15	.033
Apprentices 3/4th year	82	2.35	.65	14.6	56.1	6.1		

The results indicated that there was a significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. The frequency of responses to negative statements 3 and 22 by both study groups were not significantly different. However, when the percentage of apprentices agreeing to statement 17 was compared to the percentage of high school students agreeing, the results indicated significantly fewer apprentices agreeing than students.

Table 9

t-test Results
Affective Work Competency Cluster 06
Accurate/Quality of Work

Item # 4. (Negative statement) The quality of the job I do has nothing to do with getting more work.

Item # 12. (Negative statement) Diagnosing and checking are not that important when working on customer vehicles.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A # 4	%A #12	t	2-t.P.
						2.51	.013
Automotives 22/32	183	1.66	.55	25.1	8.7		
Apprentices 3/4th year	82	1.82	.37	17.1	0.0		

The results indicated that there was a significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. The apprentices' frequency of response for both of the statements used to identify this cluster indicated a more positive work attitude than that held by the high school students. 100% of the apprentices disagreed with statement number 12.

Table 10

t-test Results
Affective Work Competency Cluster 07
Careful/Alert

Item # 5. (Negative statement) It is more important to finish the job than to follow the correct steps.

Item # 6. (Positive statement) When I do work on a customers vehicle, I should also look for other areas where problems may occur.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A # 5	%A # 6	t	2-t.P.
						.94	.347
Automotives 22/32	183	1.85	.40	7.1	92.9		
Apprentices 3/4th year	82	1.80	.45	15.9	96.3		

The results indicated that there was no significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. The percentage of agreement to statement 26 was fairly close for both groups however, more than twice the percentage of apprentices agreed to statement number 5 than did students.

Table 11

t-test Results
Affective Work Competency Cluster 08
Pleasant/Friendly/Cheerful

Item # 1. (Positive statement) I like to come to work in a good mood.

Item # 2. (Positive statement) I like being friendly with my co-workers.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A # 1	%A # 2	t	2-t.P.
						.94	.348
Automotives 22/32	183	1.94	.27	98.9	95.6		
Apprentices 3/4th year	82	1.97	.15	100	97.6		

The results indicated that there was no significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. Both groups had a high percentage of agreement with statements 1 and 2.

Table 12

t-test Results
Affective Work Competency Cluster 09
Follows Directions

Item # 25. (Negative statement) I hate wasting my time by listening to instructions, or looking for answers in the manual.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A #25	t	2-t.P.
					1.00	.318
Automotives 22/32	183	.85	.35	14.2		
Apprentices 3/4th year	82	.90	.29	9.8		

The results indicated that there was no significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. Both groups had a low percentage of agreement with statement 25.

Table 13

t-test Results
Affective Work Competency Cluster 10
Emotionally Stable

Item # 19. (Negative) When I get frustrated at work I take it out on anything that gets in my way.

Item # 28. (Positive statement) I feel that I should control my temper at work.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A #19	%A #28	t	2-t.P.
						1.50	.135
Automotives 22/32	183	1.65	.59	24.0	89.6		
Apprentices 3/4th year	82	1.76	.47	15.9	92.6		

The results indicated that there was no significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. Both groups had similar opinions about statements 19 and 28.

Table 14

t-test Results
Affective Work Competency Cluster 11
Persevering

Item # 9. (Negative statement) If the job is too difficult I would rather someone else finish it.

Item # 18. (Negative statement) I don't like work that takes too long to complete.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A # 9	%A #18	t	2-t.P.
Automotives 22/32	183	1.55	.63	20.2	24.0	1.08	.283
Apprentices 3/4th year	82	1.64	.59	15.9	19.5		

The results indicated that there was no significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. Both groups had similar opinions about statement number 9 and 18.

Table 15

t-test Results
Affective Work Competency Cluster 12
Personal Appearance

Item # 10. (Positive statement) I like to look neat and tidy when I go to work.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A #10	t	2-t.P.
					1.55	.122
Automotives 22/32	183	.81	.39	81.4		
Apprentices 3/4th year	82	.89	.31	89.0		

The results indicated that there was no significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. Both groups scored fairly consistently to statement number 10.

Table 16

t-test Results
Affective Work Competency Cluster 13
Punctual

Item # 13. (Positive statement) I like to get to work early.

Item # 21. (Negative statement) It's okay to be late for work as long as I have an excuse.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A #13	%A #21	t	2-t.P.
						.93	.355
Automotives 22/32	183	1.41	.69	80.3	38.8		
Apprentices 3/4th year	82	1.32	.72	74.4	41.5		

The results indicated that there was no significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. Both groups had similar opinions about statement number 13 and 21.

Table 17

t-test Results
Affective Work Competency Cluster 14
Quality of Work/Achieving/Speedy

Item # 14. (Positive statement) I like to do the job right the first time.

Item # 23. (Positive statement) I like to be able to produce as much quality work as anyone else.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A #14	%A #23	t	2-t.P.
						.75	.451
Automotives 22/32	183	1.89	.32	96.7	92.9		
Apprentices 3/4th year	82	1.92	.26	97.6	95.1		

The results indicated that there was no significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. Both groups scored high in the percentage of agreement to statement number 14 and 23.

Table 18

t-test Results
Affective Work Competency Cluster 15
Dedicated/Devoted/Honest/Conscientious

Item # 8. (Negative statement) I feel that if I can hide a mistake on a job with no one else knowing, it's okay.

Item # 24. (Positive statement) I feel that if I see something being done at work which is wrong, it's my responsibility to do something about it.

Item # 29. (Positive statement) I feel I should put in a full days work.

Number of cases = N
Mean = M
Standard Deviation = S.D.
Percent Agree = %A
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	%A # 8	%A #24	%A #29	t .01	2-t.P. .995
Automotives 22/32	183	2.73	.62	8.2	90.2	91.3		
Apprentices 3/4th year	82	2.73	.52	13.4	90.2	96.3		

The results indicated that there was no significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. Both groups scored fairly consistently to statement number 8, 24, and 29.

Table 19 is a summary of the affective competency clusters, cluster titles, the 2-tail probability, and the decision of whether to reject or fail to reject the null hypothesis for each affective competency cluster.

Table 19

Summary of t-tests
Affective Work Competency Clusters 1 to 15
2-tail Probability and Decision

Cluster Number	Cluster Title	2-tail Probability	Decision
01	Ambitious	.51	accept
02	Co-operative/Helpful	.02	reject
03	Adaptable	.45	accept
04	Considerate/Courteous	.03	reject
05	Independent/Initiating	.03	reject
06	Accurate/Quality of Work	.01	reject
07	Careful/Alert	.35	accept
08	Pleasant/Friendly/Cheerful	.35	accept
09	Follows Directions	.32	accept
10	Emotionally Stable	.14	accept
11	Persevering	.28	accept
12	Personal Appearance	.12	accept
13	Punctual	.36	accept
14	Quality of Work/ Achieving/Speedy	.45	accept
15	Dedicated/Devoted/Honest/ Conscientious	.99	accept

The clusters were combined for each of the study groups and then a Total t-test analysis was performed to identify if a significant difference existed between the apprentices and the high school students. Table 20 contains the results of the Total t-test.

Table 20

Total t-test Results
Affective Competency Clusters 1 to 15

Number of cases = N
Mean = M
Standard Deviation = S.D.
t Value = t
2-tail Probability = 2-t.P.

	N	M	S.D.	t	2-t.P.
				.37	.712
Automotives 22/32	183	24.56	3.94		
Apprentices 3/4th year	82	24.74	3.04		

The results indicated that there was no significant difference in attitude between the high school students taking automotives and the automotive apprentices at the .05 level of significance. The total t-test analysis failed to reject the null hypothesis.

Summary of Results

This chapter has presented the data analysis for the fifteen affective work competencies as they relate to the two null hypothesis. Tables 4 to 18 have provided data as it related to the first null hypothesis. Table 19 summarizes those results and indicates the decision of whether to accept or reject this hypothesis. Table 20 has presented the data as it related to the second null hypothesis. From the analysis the following clusters failed to accept the first null hypothesis:

HO 1: There is no significant difference among the t-test scores for each of the affective competencies between the high school students enrolled in automotives and the automotive apprentices.

Cluster Number	Cluster Title	2-tail Probability	Decision
02	Co-operative/Helpful	.02	reject
04	Considerate/Courteous	.03	reject
05	Independent/Initiating	.03	reject
06	Accurate/Quality of Work	.01	reject

The analysis did however accept the second null hypothesis.

HO 2: There is no significant difference among the total t-test scores for each of the affective competencies between the high school students enrolled in automotives and the automotive apprentices.

CHAPTER V

DISCUSSION, IMPLICATIONS & RECOMMENDATIONS

This study sought to compare the attitudes toward work which are held by high school students enrolled in vocational education classes to those of apprentices. To achieve this purpose those attitudes held by high school students enrolled in automotives were compared to those of automotive apprentices. It was hypothesized that apprentices being older and having more work experience would have significantly different affective work competencies than their younger counterparts.

The procedure for the study involved the development of a questionnaire using the Affective Competency Clusters identified by Beach (1979). High school students enrolled in automotives assisted in the writing of statements for each of the fifteen affective competency clusters. These statements became part of the study instrument. The sample consisted of grade eleven and twelve high school students taking automotives in the Edmonton public school system and those automotive apprentices attending the Northern Alberta Institute of Technology during the February 1985 school

term. The high school students and the apprentices were asked to answer the questionnaire by agreeing or disagreeing with each instrument statement. Those instruments which did not have responses to all statements concerning the affective competencies were eliminated from the analysis. The instruments were subjected to analysis and, the following is a discussion of those results.

Discussion of Results

The discussion of the results will be in two parts. The first part will concern itself with the results of the t-test for each of the fifteen affective competency clusters while, the second part will discuss the total t-test results for all of the affective competency clusters.

The results in the first part of the analysis indicated that in four out of fifteen clusters there were differences at the .05 level of significance between the high school students taking automotives and the automotive apprentices. Tables 4 to 18 show the comparative results of the t-tests for the apprentices and students in each competency cluster.

The clusters which failed to accept the first null hypothesis that: there are no significant differences between the affective work competencies of high school students enrolled in automotives and automotive apprentices were:

Cluster 02.	Co-operative/Helpful	(Table 5)
Cluster 04.	Considerate/Courteous	(Table 7)
Cluster 05.	Independent/Initiating	(Table 8)
Cluster 06.	Accurate/Quality of Work	(Table 9)

The following is a discussion of the results of the affective competency clusters which were significantly different at the .05 level of significance. Statement number seven of Cluster 02. Co-operative/Helpful (Table 5) read as follows:

> (Negative statement) I don't like helping other mechanics with their work when they're busy and I'm not.

Fewer apprentices agreed with this statement than did their high school counterparts. These results coincide with the author's personal knowledge about the subject matter. Apprentices having more "real work" experience know that keeping busy on the job is part of staying employed. On the other hand, if the automotives students are not busy in the lab, there are no consequences as threatening. Statement number twenty-seven read as follows:

> (Positive statement) I don't mind volunteering for overtime if asked to.

The results indicated that more apprentices agreed with this statement than did high school students. From the author's personal experience, working overtime means being paid at a higher rate or being able to trade time worked for paid time off. On the other hand, when students are asked to stay later in the lab to complete a project, their rewards are not as concrete and immediate. Furthermore, many high school students are involved in extra curricular activities which begin at the end of the instructional day, therefore they are unable to stay longer in order to complete an assignment.

Statement number fifteen of Cluster 04. Considerate/Courteous (Table 7) read as follows:

> (Negative statement) Customers don't know what they are talking about.

A significantly higher (15) percent of apprentices agreed with this statement than did high school students. The significant difference is again due to the apprentices' "real life" experiences as compared to the students' lab experiences. Apprentices have more personal interaction with customers by talking and listening to them, repairing their vehicles, and diagnosing complaints about repairs done. It is in these discussions that apprentices realize most customers have little expertise in the automotive field. At work even though apprentices are learning they are still expected to produce quality work, free of errors

yet, a customer with his lack of knowledge can influence the future of an apprentices' employment if not satisfied with work performed. On the other hand, in the school environment students are not expected to deal with customers, nor do customers influence a students' future in the classroom. Furthermore, school is considered a learning situation and the consequences for mistakes made are not as severe as those of the apprentices. The students' learning experiences tend to be void of customer interaction, while for apprentices, dealing with customers is part of the job; for this reason apprentices tend to be more negative in their attitudes toward customers than do students.

Statement number seventeen of Cluster 05. Independent/Initiating (Table 8) read as follows:

> (Positive statement) I like to start as soon as I get to work.

20.9 percent more students than apprentices agreed to this statement. This result coincides with the findings of Miller and Usoro (1981) who found that students expected to display more independence and initiative than employers expected from beginning employees. High school students having little or no work experience tend to display a great amount of eagerness at starting new tasks. Unfortunately this enthusiasm sometimes results in the job having to be redone because incorrect procedures were followed. On the other hand, apprentices having had work experience, would

have found that employers expect to train beginning employees as to the established method of completing a task. Furthermore, there is no incentive for an apprentice to begin work as soon as he arrives since he is paid an hourly wage and not by the amount of work he has completed. In conclusion Maguire et al. (1979) found that students who had been working but had returned to a post secondary institution for technical upgrading felt they had little control over their future at work. Apprentices are indentured for four years and no amount of independence or initiative shown on the job will change their indenture period, rate of pay, or type of work given to them. Therefore it is understandable that the apprentices scored lower in this cluster than the high school students.

Statement number four of Cluster 06. Accurate/Quality of Work (Table 9) read as follows:

> (Negative statement) The quality of the job I do has nothing to do with getting more work.

While statement number twelve read:

> (Negative statement) Diagnosing and checking are not that important when working on customer vehicles.

A higher percentage of apprentices agreed to these statements than did high school students. 100% of the apprentices agreed that diagnosing and checking are an important part of the job, while 8.7 percent of the students were in disagreement. The apprentices' years of work

experience would account for their total agreement with statement number twelve. Furthermore, the years of work experience of the apprentices as compared to the hours of instructional time of the high school students would account for the apprentices scoring higher than students to statement number four. Work experience should have taught the apprentices that customers come back to shops where quality work is produced and that satisfied as well as dissatisfied customers will "spread the word" about the work that was performed on their vehicle.

In order to test the second null hypothesis, the fifteen affective work competency clusters scores were totaled for the high school students and the automotive apprentices and a t-test was performed to identify if a significant difference existed between both groups at the .05 level of significance. The results of the total t-test (Table 20) indicated support for the second null hypothesis that: there are no significant differences between the total affective work competencies of high school students enrolled in automotives and automotive apprentices. A study conducted by Miller and Usoro (1981) found similar results for the total scores for the affective work competencies of vocational-industrial and industrial-technical students. In this study, even though there is a difference in age and work experience between the two study groups, it can be assumed that the work experiences the students are acquiring

by taking vocational education classes in high school are providing these students with enough "real life" situations to enable them to develop attitudes representative of industry.

Implications of this Study

Job survival and promotion are becoming more dependent upon the attitudes a person brings with him to work. For this reason the following statements have educational implications.

1. It is important that students be aware of the affective work competencies they possess and those that are expected of them by employers.
2. The amount and type of work experiences students are provided with in school will help determine their attitudes toward work.
3. Age and maturity are a contributing factor in the development of a person's affective work competencies.
4. The vested interest a person has in learning or maintaining a job will determine his attitude toward work.
5. The amount of knowledge a person has about his work will determine his affective work competencies.

Recommendations

Results from this investigation showed that there were differences in several of the affective work competencies between the high school students taking automotives and automotive apprentices. In view of these findings it is recommended that:

1. A concentrated effort be made to teach high school students affective work competencies conducive to industrial practice.
2. High school students be provided with the opportunity to participate in Work Experience or Work Study programs in order that they gain knowledge about the expectations that employers have of them.
3. This instrument be used in secondary vocational education for evaluating the degree of affective work behaviors of students. "By so doing, the instructors might be able to identify areas in which students have inadequate competency and take appropriate action (Miller & Usoro, 1981, p.41)."
4. This instrument be used at the junior high level to identify the attitudes toward work that students have before entering high school.
5. Differences in students' attitudes be monitored to identify if a change has occurred in the development of a learner's attitude toward work.

6. Teachers in Industrial Education have more involvement with industry through the use of the instrument to identify industries attitude about work.
7. More time be spent at the post-secondary level teaching apprentices affective work competencies.

Recommendations for Further Research

For further research it is recommended that:

1. The original instrument be tested.

2. A replication of the study be carried out to include:
   a. high school students enrolled in Automotives 22, 32.
   b. automotive apprentices, third and fourth year.
   c. journeymen mechanics with at least ten years of work experience selected at random from the Edmonton area.

3. A study of the attitudes toward work of high school students taking academic classes be compared to those of high school students enrolled in industrial education classes.

4. A study of the attitudes toward work of high school students enrolled in industrial education classes living in urban areas be compared to those of students living in rural areas.

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APPENDIX A

Pilot Study Questionnaire

I would like to get your feelings and opinions about different aspects of your shop work. I have developed a questionnaire for this purpose.

The questionnaire is designed to express your opinions about your work in the shop. There are no right or wrong responses so do not hesitate to mark the statements honestly. You will notice there is no place for your name. Please do not record your name. All responses will be strictly confidential. DO NOT OMIT ANY ITEMS.

Place an "X" on the appropriate line as to your honest feelings about the statement being made.

Example

TRUE FALSE

In my opinion the color of this paper is white.

T_X_ F___

1. I feel it is important to be the first one to complete all of my shop work for the day.

T___ F___

2. I am willing to do more work for extra pay.

T___ F___

3. I am willing to do more work even if extra pay is not given.

T___ F___

4. I feel it is important to co-operate with fellow workers when I work in the shop.

T___ F___

5. I feel I should help a fellow worker operate a piece of equipment if he asks me to.

T___ F___

6. I like to be told exactly what to do in completing a job.

T___ F___

7. I would rather get technical information for myself than ask someone.

T___ F___

8. I would rather look up technical information in a manual than ask anyone else for help.

T___ F___

9. I feel I should wait my turn when I have to share equipment.

T___ F___

10. I feel that if a fellow worker needs to borrow a tool I could lend him one of mine.

T___ F___

11. I like to start work as soon as I receive the work order.

T___ F___

12. I like to be given choices of how to complete a job.

T___ F___

13. I like to start a job on my own without help.

T___ F___

14. In my opinion, measuring and checking each component is not as important as completing the job.

T___ F___

15. I feel that completing the job is more important than checking the final specifications.

T___ F___

16. When assembling a component and the parts do not fit it is all right to force them.

T___ F___

17. It is more important to finish the job than to follow the correct steps.

T___ F___

18. In my opinion, safety has nothing to do with completing a job and obtaining a pay check.

T___ F___

19. In my opinion, I work better by myself than with a fellow worker.

T___ F___

20. I feel that it is a lot easier to ask fellow workers for help if I am friendly with them.

T___ F___

21. I like to talk to fellow workers during the working day.

T___ F___

22. I like to learn the correct procedures before undertaking a new job.

T___ F___

23. I feel that when a superior asks me to do something, I should not refuse.

T___ F___

24. I feel if I have tried something more than once and failed I should give up.

T___ F___

25. I feel if I have tried something and failed a superior should do it for me.

T___ F___

26. In my opinion, the way I look will not affect the type of job I can get.

T___ F___

27. In my opinion, it does not matter how I look or dress as long as I come to work.

T___ F___

28. In my opinion, being late is not as important as getting to work.

T___ F___

29. Coming to work without my tools is all right because I can always borrow from a fellow worker.

T___ F___

30. Keeping a shop tool in my tool box is not critical.

T___ F___

31. I would rather correct the mistakes I have made on a job before it leaves the shop.

T___ F___

32. If the job I have been working on has a few mistakes, it is all right as long as a superior doesn't see them.

T___ F___

33. In my opinion, it does not matter how long it takes to finish a job as long as it gets done.

T___ F___

34. I will not look for missing shop tools which I have not used.

T___ F___

35. If I work on a customer vehicle it is all right to hide poor workmanship.
T___ F___

36. I like to work at a job until it is completed.
T___ F___

37. I feel that mistakes on a job can be hidden and no one has to know about them.
T___ F___

38. I feel that every job I work on should be done to the best of my ability.
T___ F___

39. In my opinion, if a shop tool is missing it is everyone's responsibility to look for it.
T___ F___

To help me analyze the questionnaire that you are filling out I need to know some personal information. Would you please place an "X" on the appropriate line. Do not fill in your name.

AGE

____ 15 yrs. to 18 yrs.
____ 19 yrs. to 22 yrs.
____ 23 yrs. to 25 yrs.
____ 26 yrs. to 29 yrs.
____ 30 yrs. to 33 yrs.
____ 34 yrs. to 37 yrs.
____ 38 yrs. to 41 yrs.
____ 42 yrs. to 45 yrs.
____ 46 yrs. to 49 yrs.
____ 50 yrs. to 53 yrs.
____ 54 yrs. to 57 yrs.
____ 58 yrs. to 61 yrs.
____ 62 yrs. to 65 yrs.

WORK EXPERIENCE

____ 0 yrs. to 5 yrs.
____ 6 yrs. to 11 yrs.
____ 12 yrs. to 17 yrs.
____ 18 yrs. to 23 yrs.
____ 24 yrs. to 29 yrs.
____ 30 yrs. to 35 yrs.
____ 36 yrs. plus

STATUS

____ Student
____ Apprentice
____ Mechanic
____ Foreman
____ Supervisor
____ Manager

RESIDENCE

____ Rural
____ Urban

STUDENT GRADE LEVEL

____ Gr. 10
____ Gr. 11
____ Gr. 12

APPRENTICESHIP LEVEL

____ First year
____ Second year
____ Third year
____ Fourth year

APPENDIX B

Affective Competency Clusters and Descriptors

Cluster 01. Ambitious

1. Willing to work.
2. Willing to do extra work.

Cluster 02. Co-operative/Helpful

1. Helps others when asked.
2. Volunteers spare time.

Cluster 03. Adaptable/Resourceful

1. Able to perform different tasks.
2. Works out problems on his own.

Cluster 04. Considerate/Courteous

1. Is considerate of others feelings.
2. Acts in a mature manner.

Cluster 05. Independent/Initiating

1. Reads manual to find answers.
2. Asks to be given work.
3. Hands assignments in on time.

Cluster 06. Accurate/Quality of Work

1. Does task correctly the first time.
2. Follows the manual in completing task.
3. Takes pride in doing a job well.

Cluster 07. Careful/Alert/Perceptive

1. Works in a safe manner.
2. Uses tools and equipment appropriately.
3. Knows when to ask instructor for assistance.
4. Pays attention to the task.

Cluster 08. Pleasant/Friendly/Cheerful

1. Has a pleasing personality.
2. Does not criticize a co-workers performance.
3. Works well with others.

Cluster 09. Responsive/Follows Directions

1. Does what he/she is told.
2. Listens to and carries out instructions.

Cluster 10. Emotionally Stable/Judging/Poised

1. Thinks before acting.
2. Does not take out aggression on work or other people.
3. Controls temper.
4. Accepts criticism and learns from it.

Cluster 11. Persevering/Patient/Enduring/Tolerant

1. Stays with work assigned.
2. Accepts other workers.
3. Completes all work assigned.
4. Stays at work station.

Cluster 12. Neat/Orderly/Personal Appearance/Manner

1. Takes care of personal appearance.
2. Keeps work area neat and tidy.
3. Cleans tools after use.
4. Replaces all tools used.

Cluster 13. Dependable/Punctual/Reliable/Responsible

1. Comes to class on time.
2. Trust student to complete assigned task.
3. Comes to class every day.
4. Informs teacher of absences.
5. Brings required materials to class.
6. Does what is asked to do by instructor.

Cluster 14. Efficient/Quality of Work/Achieving/Speedy

1. Work is completed in a reasonable length of time.
2. Ask for work to be inspected at critical times.
3. Work does not have to be redone.
4. Does not spend class time talking to friends.

Cluster 15. Dedicated/Devoted/Honest/Loyal/Conscientious

1. Works for complete period.
2. Does not skip class.
3. Concerned with operation of class.
4. Looks for missing tools.
5. Maintains tool boards.
6. Informs teacher of unsafe equipment or student performance.
7. Helps look for missing tools.
8. Cleans work area.
9. Follows safe working habits.

APPENDIX C

Affective Competency Clusters

Positive and Negative Statements

(P) Positive statement
(N) Negative statement

Cluster 01. Ambitious

(P) 1. I am willing to do more work even if I do not receive more pay.
(P) 2. I like to look for extra work.
(N) 3. I won't do extra work unless told to.
(N) 4. I am willing to do more work, but only for more pay.

Cluster 02. Co-operative/Helpful

(P) 1. I will help others even though it runs into my coffee break time.
(P) 2. I don't mind volunteering for overtime if asked to.
(N) 3. I don't like working overtime.
(N) 4. I don't like helping others with their work when they're busy and I'm not.

Cluster 03. Adaptable/Resourceful

(P) 1. I'll take a problem home with me and look for solutions.
(P) 2. I like to learn new things at work so I can do different types of work.
(N) 3. Learning new things at work won't help me get a better job.
(N) 4. If I can't solve a problem someone else should try.

Cluster 04. Considerate/Courteous

(P) 1. I like to help people.
(P) 2. The customer's complaints are a real problem.
(N) 3. Customers don't know what they are talking about.
(N) 4. Someone elses problems are no concern of mine.

Cluster 05. Independent/Initiating

(P) 1. I like to start as soon as I get to work.
(P) 2. If there is a faster way of doing a job I will try to find it.
(N) 3. Solving problems at work is not my job.
(N) 4. It's not part of my job to go look for work.

Cluster 06. Accurate/Quality of Work

(P) 1. The type of work I do says something about me.
(P) 2. I like having people ask me to work for them.
(N) 3. In my opinion, diagnosing and checking are not that important.
(N) 4. Quality of work has nothing to do with getting more work.

Cluster 07. Careful/Alert/Perceptive

(P) 1. I feel that it is important to do the best that I can on a job.
(P) 2. When I do work I should also look for other area where problems may occur.
(N) 3. It is more important to finish the job than to follow the correct steps.
(N) 4. I feel that I should only do what I am told to and nothing more.

Cluster 08. Pleasant/Friendly/Cheerful

(P) 1. I like to make new friends.
(P) 2. I like to come to work in a good mood.
(N) 3. When something bothers me I let everyone know.
(N) 4. Having a pleasant attitude has nothing to do with the job.

Cluster 09. Responsive/Follows Directions

(P) 1. Part of my job is to do what I am told.
(P) 2. I like to learn the correct way of doing things.
(N) 3. I hate wasting my time listening to instructions.
(N) 4. Pretending to listen is my of staying out of trouble.

Cluster 10. Emotionally Stable/Judging/Poised

(P) 1. I think I can learn from criticism.
(P) 2. I feel that I should control my temper.
(N) 3. I take criticism personally.
(N) 4. I get frustrated when things don't go my way.

Cluster 11. Persevering/Patient/Enduring/Tolerant

(P) 1. I get a lot of satisfaction of completing a job.
(P) 2. How long it takes to do the job is not as important as getting the job done.

(N) 3. I don't like work that takes to long to complete.
(N) 4. If the job is too difficult I would rather someone else finish it.

Cluster 12. Neat/Orderly/Personal Appearance/Manner

(P) 1. When I look neat and tidy I feel I do a better job.
(P) 2. I like to look neat and tidy when I go to work.
(N) 3. In my opinion the way I look will not affect the type of job I can get.
(N) 4. In my opinion it does not matter how I look or dress as long as I come to work.

Cluster 13. Dependable/Punctual/Reliable/Responsible

(P) 1. I like to get to work every day.
(P) 2. I like to get to work early.
(N) 3. It's okay to be late for work as long as I have an excuse.
(N) 4. In my opinion being late is all right as long as get to work.

Cluster 14. Efficient/Quality of Work/Achieving/Speedy

(P) 1. I like to do the job right the first time.
(P) 2. I like to be able to produce as much work as anyone else.
(N) 3. Mistakes on a job can be hidden.
(N) 4. In my opinion it does not matter how long it takes to finish a job long as it gets done.

Cluster 15. Dedicated/Devoted/Honest/Loyal/Conscientious

(P) 1. I feel that if I see something being done which is wrong it's my responsibility to do something about it.
(P) 2. I feel I should work when I get work, and not fool around.
(N) 3. I feel that if I see something being done which is wrong it's none of my business.
(N) 4. I feel that if I can get away with something at work it's okay.

APPENDIX D

Original Questionnaire

This is not a test. There are no "right" or "wrong" responses to any of the sentences. Just answer as honestly as you can.

The following sentences ask you how you feel about work. You are to tell how you feel about each statement by filling in the circle on your answer sheet.

Here is a practice sentence:

Example: Work is boring.
Agree (A)
Disagree (D)

Which of the two ways tells best how you feel about the sentence: (A) or (D)? Using an H.B. pencil fill in your choice on the answer sheet.

Please work carefully and quickly. Do not spend a long time on any one sentence. Please respond to each sentence and fill in only one response to each. Completely erase any changes you may have made.

Do not fill in your name on the answer sheet.

1. I feel that if I can get away with something at work it's okay.
(A) (D)

2. I like to make new friends at work.
(A) (D)

3. In my opinion being late is all right as long as I get to work.
(A) (D)

4. It's not part of my job to go look for work.
(A) (D)

5. Quality of work has nothing to do with getting more work.
(A) (D)

6. It is more important to finish the job than to follow the correct steps.
(A) (D)

7. I like to learn the correct way of doing things.
(A) (D)

8. I am willing to do more work even if I do not receive more pay.
(A) (D)

9. When I work, I should also look for other areas where problems may occur.
(A) (D)

10. I don't like helping others with their work when they're busy and I'm not.
(A) (D)

11. I like to come to work in a good mood.
(A) (D)

12. If the job is too difficult I would rather someone else finish it.
(A) (D)

13. I like to look neat and tidy when I go to work.
(A) (D)

14. I am willing to do more work, but only for more pay.
(A) (D)

15. In my opinion, diagnosing and checking are not that important.
(A) (D)

16. I like to get to work early.
(A) (D)

17. I like to do the job right the first time.
(A) (D)

18. Customers don't know what they are talking about.
(A) (D)

19. I like to look for extra work.
(A) (D)

20. I like to start as soon as I get to work.
(A) (D)

21. I don't like working overtime.
(A) (D)

22. I don't like work that takes to long to complete.
(A) (D)

23. I like having people ask me to work for them.
(A) (D)

24. I get frustrated when things don't go my way, so I take it out on others.
(A) (D)

25. I like to help people.
(A) (D)

26. It's okay to be late for work as long as I have an excuse.
(A) (D)

27. Solving work related problems is not my job.
(A) (D)

28. It's all right to hide mistakes on a job.
(A) (D)

29. I feel at work I should only do what I am told, and nothing more.
(A) (D)

30. I like to be able to produce as much quality work as anyone else.
(A) (D)

31. Having a pleasant attitude has nothing to do with the job.
(A) (D)

32. I feel that if I see something being done at work which is wrong, it's my responsibility to do something about it.
(A) (D)

33. Learning new things at work won't help me get a better job.
(A) (D)

34. I think I can learn from criticism.
(A) (D)

35. I hate wasting my time by listening to instructions.
(A) (D)

36. Someone elses problems are no concern of mine.
(A) (D)

37. I feel that if I see something being done at work which is wrong, it's none of my business.
(A) (D)

38. I like to learn new things at work so I can do different types of work.
(A) (D)

39. I don't mind volunteering for overtime if asked to.
(A) (D)

40. I feel that I should control my temper at work.
(A) (D)

41. I like to get to work every day.
(A) (D)

42. I feel I should work when I get to work, and not fool around.
(A) (D)

43. I feel that it is important to do the best that I can on a job.
(A) (D)

44. I get a lot of satisfaction from completing a job.
(A) (D)

45. The way I dress at work will not affect how people respond to me.
(A) (D)

46. I will help others at work even though it runs into my coffee break time.
(A) (D)

47. I won't do extra work unless told to.
(A) (D)

Please answer the remaining questions by filling in the correct circle on your answer sheet.

48. Your age is:

(A) 14-15
(B) 16-17
(C) 18-19
(D) 20-21
(E) 22 and older

49. Sex

(A) Male
(B) Female

50. The school you are presently attending is?

(A) Eastglen Composite High School
(B) Harry Ainlay Composite High School
(C) Jasper Place Composite High School
(D) J. Percy Page Composite High School
(E) M.E. Lazerte Composite High School

51. The school you are presently attending is?

(A) Victoria Composite High School
(B) N.A.I.T.

52. If you are a high school student, the Automotives program you are presently enrolled in is?

(A) Automotives 22
(B) Automotives 32

53. If you are an apprentice, the year of apprenticeship you are in is?

(A) First
(B) Second
(C) Third
(D) Fourth

54. If you are a high school student do you have a part time job?

(A) Yes
(B) No

55. If you are a high school student did you have a summer job working for someone other than a relative?

(A) Yes
(B) No

56. If you are an apprentice how many years of work experience do you have after leaving school?

(A) 0-1
(B) 2-3
(C) 4-5
(D) 6 and over

APPENDIX E

Approval Letter

Edmonton Public School Board

February 6, 1985

Mr. W. A. Kiffiak
School Liaison Officer
Division of Field Services
The University of Alberta
Edmonton, Alberta
T6G 2G5

Dear Mr. Kiffiak:

Re: Research Request - Affective Learner Competencies in Automotives - Erich Willuhn

The above research request has been approved on a permissive basis following examination by our department.

Erich Willuhn should now contact the principals of the following schools to obtain final approval and to make the arrangements necessary for conducting the study.

Eastglen - El Probert, Principal
Harry Ainlay - George Nicholson, Principal
Jasper Place - Bob Maskell, Principal
J. Percy Page - John Pankhurst, Principal
M.E. Lazerte - Elaine Mills, Principal
Victoria - Bob Dean, Principal

We would appreciate receiving a copy of the results of the study as soon as they are available.

Sincerely,

T. A. Blowers, PhD
Director Program Review,
Research, Liaison

TAB/jmr

cc: Dr. K. Puffer
Erich Willuhn
Principals

APPENDIX F

Revised Apprentice Questionnaire

This is not a test.
There are no "right" or "wrong" answers.
Answer as honestly as you can by filling in (A) AGREE
or
(D) DISAGREE

Do not spend a long time on any one sentence, but answer all questions.

1. I like to come to work in a good mood.
(A) (D)

2. I like being friendly with my co-workers.
(A) (D)

3. It's not part of my job to go look for work when I'm not busy.
(A) (D)

4. The quality of the job I do has nothing to do with getting more work.
(A) (D)

5. It is more important to finish the job than to follow the correct steps.
(A) (D)

6. When I work on a customers vehicle, I should also look for other areas where problems may occur.
(A) (D)

7. I don't like helping other mechanics with their work when they're busy and I'm not.
(A) (D)

8. I feel that if I can hide a mistake on a job with no one else knowing, it's okay.
(A) (D)

9. If the job is too difficult I would rather someone else finish it.
(A) (D)

10. I like to look neat and tidy when I go to work.
(A) (D)

11. I am willing to do extra work, but only for more pay.
(A) (D)

12. Diagnosing and checking are not that important when working on customer vehicles.
(A) (D)

13. I like to get to work early.
(A) (D)

14. I like to do the job right the first time.
(A) (D)

15. Customers don't know what they are talking about.
(A) (D)

16. I like to look for extra work when there's nothing to do in the shop.
(A) (D)

17. I like to start as soon as I get to work.
(A) (D)

18. I don't like work that takes too long to complete.
(A) (D)

19. When I get frustrated at work I take it out on anything that gets in my way.
(A) (D)

20. I like helping the other mechanics in the shop.
(A) (D)

21. It's okay to be late for work as long as I have an excuse.
(A) (D)

22. Figuring out how to repair the customer's complaint about his vehicle is not my job.
(A) (D)

23. I like to be able to produce as much quality work as anyone else.
(A) (D)

24. I feel that if I see someone else repairing a vehicle in an unsafe manner, it's my responsibility to let them know.
(A) (D)

25. I hate wasting my time by listening to instructions, or looking for answers in the manual.
(A) (D)

26. I like to learn new skills at work so I can do different types of jobs.
(A) (D)

27. I don't mind volunteering for overtime if asked to.
(A) (D)

28. I feel that I should control my temper at work.
(A) (D)

29. I feel I should put in a full days work.
(A) (D)

Please answer the remaining questions by filling in the correct space.

30. Your age is:

(A) 18-19
(B) 20-21
(C) 22 and older

31. The year of apprenticeship you are in is?

(A) Third
(B) Fourth

32. How many years of work experience do you have after leaving school?

(A) 2-3
(B) 4-5
(C) 6 and over

APPENDIX G

Revised Student Questionnaire

Do Not fill in your name on the questionnaire or answer sheet.
This is not a test.
There are no "right" or "wrong" answers.
Answer as honestly as you can about how you Feel About Work, by filling in

(A) AGREE
or
(D) DISAGREE

on the answer sheet provided.

Here is a practice sentence:

Example: Work is boring.
(A) (D)

Which of the two ways tells best how you Feel About Work: (A) or (D)?
Using an H.B. pencil fill in your choice on the answer sheet.
Do not spend a long time on any one sentence, but answer all questions.
Completely erase any changes you may have made.

1. I like to come to work in a good mood.
(A) (D)

2. I like being friendly with my co-workers.
(A) (D)

3. It's not part of my job to go look for work when I'm not busy.
(A) (D)

4. The quality of the job I do has nothing to do with getting more work.
(A) (D)

5. It is more important to finish the job than to follow the correct steps.
(A) (D)

6. When I work on a customers vehicle, I should also look for other areas where problems may occur.
(A) (D)

7. I don't like helping others with their work when they're busy and I'm not.
(A) (D)

8. I feel that if I can hide a mistake on a job with no one else knowing, it's okay.
(A) (D)

9. If the job is too difficult I would rather someone else finish it.
(A) (D)

10. I like to look neat and tidy when I go to work.
(A) (D)

11. I am willing to do extra work, but only for more pay.
(A) (D)

12. Diagnosing and checking are not that important when working on customer vehicles.
(A) (D)

13. I like to get to work early.
(A) (D)

14. I like to do the job right the first time.
(A) (D)

15. Customers don't know what they are talking about.
(A) (D)

16. I like to look for extra work when there's nothing to do in the shop.
(A) (D)

17. I like to start as soon as I get to work.
(A) (D)

18. I don't like work that takes too long to complete.
(A) (D)

19. When I get frustrated at work I take it out on anything that gets in my way.
(A) (D)

20. I like helping others in the shop.
(A) (D)

21. It's okay to be late for work as long as I have an excuse.
(A) (D)

22. Figuring out how to repair the customer's complaint about his vehicle is not my job.
(A) (D)

23. I like to be able to produce as much quality work as anyone else.
(A) (D)

24. I feel that if I see someone else repairing a vehicle in an unsafe manner, it's my responsibility to let them know.
(A) (D)

25. I hate wasting my time by listening to instructions, or looking for answers in the manual.
(A) (D)

26. I like to learn new skills so I can do different types of jobs.
(A) (D)

27. I don't mind volunteering to work later if asked to.
(A) (D)

28. I feel that I should control my temper at work.
(A) (D)

29. I feel I should put in a full days work.
(A) (D)

Please answer the remaining questions by filling in the correct space.

30. Your age is:

(A) 14-15
(B) 16-17
(C) 18-19

31. Sex

(A) Male
(B) Female

32. The school you are presently attending is?

(A) Eastglen Composite High School
(B) Harry Ainlay Composite High School
(C) Jasper Place Composite High School
(D) J. Percy Page Composite High School
(E) M.E. Lazerte Composite High School

33. The school you are presently attending is?

    (A) Victoria Composite High School

34. The Automotives program you are presently enrolled in is?

    (A) Automotives 22
    (B) Automotives 32

35. Do you have a part time job?

    (A) Yes
    (B) No

36. Did you have a summer job working for someone other than a relative?

    (A) Yes
    (B) No

APPENDIX H

Questionnaire Instructions

and

Optical Score Sheet

Enclosed are the questionnaires and the answer sheets which I spoke to you about. There are questionnaires for one class but enough answer sheets for everyone. Please administer the questionnaires to the Automotives 22 and 32 students in your school.

Have the students answer all questions on the answer sheet only. Do not fill in the questionnaire.

Make sure that the students are using H.B. pencils.

Return the questionnaires and filled out answer sheets. Please attach the new mailing labels to the envelope, and mail the envelope back to me.

If there are any questions please call me at 476-8611.

Thank You

Erich Willuhn

NAME _____

GENERAL PURPOSE - NCS - ANSWER SHEET

FOR PROCESSING BY NATIONAL COMPUTER SYSTEMS 4401 West 76th St., Minneapolis, Minn.

EXAMPLE

WRONG 1 Ⓣ ◐ ○ ○ ○

WRONG 2 Ⓣ ⊘ ○ ○ ○

WRONG 3 Ⓣ ◐ ● ○ ○

RIGHT 4 Ⓣ ◐ ○ ● ○

IMPORTANT DIRECTIONS FOR MARKING ANSWERS

Use black lead pencil only (#2½ or softer).
Make heavy black marks that fill the circle completely.
Erase clearly any answer you wish to change.
Make no stray marks on this answer sheet.

← REFER TO THESE EXAMPLES BEFORE STARTING PRACTICE EXERCISES →

PRACTICE

A B C D E
1 Ⓣ ◐ ○ ○ ○
2 Ⓣ ◐ ○ ○ ○
3 Ⓣ ◐ ○ ○ ○
4 Ⓣ ◐ ○ ○ ○

1 Ⓣ ◐ ○ ○ ○	11 Ⓣ ◐ ○ ○ ○	21 Ⓣ ◐ ○ ○ ○	31 Ⓣ ◐ ○ ○ ○	41 Ⓣ ◐ ○ ○ ○	51 Ⓣ ◐ ○ ○ ○
2 Ⓣ ◐ ○ ○ ○	12 Ⓣ ◐ ○ ○ ○	22 Ⓣ ◐ ○ ○ ○	32 Ⓣ ◐ ○ ○ ○	42 Ⓣ ◐ ○ ○ ○	52 Ⓣ ◐ ○ ○ ○
3 Ⓣ ◐ ○ ○ ○	13 Ⓣ ◐ ○ ○ ○	23 Ⓣ ◐ ○ ○ ○	33 Ⓣ ◐ ○ ○ ○	43 Ⓣ ◐ ○ ○ ○	53 Ⓣ ◐ ○ ○ ○
4 Ⓣ ◐ ○ ○ ○	14 Ⓣ ◐ ○ ○ ○	24 Ⓣ ◐ ○ ○ ○	34 Ⓣ ◐ ○ ○ ○	44 Ⓣ ◐ ○ ○ ○	54 Ⓣ ◐ ○ ○ ○
5 Ⓣ ◐ ○ ○ ○	15 Ⓣ ◐ ○ ○ ○	25 Ⓣ ◐ ○ ○ ○	35 Ⓣ ◐ ○ ○ ○	45 Ⓣ ◐ ○ ○ ○	55 Ⓣ ◐ ○ ○ ○
6 Ⓣ ◐ ○ ○ ○	16 Ⓣ ◐ ○ ○ ○	26 Ⓣ ◐ ○ ○ ○	36 Ⓣ ◐ ○ ○ ○	46 Ⓣ ◐ ○ ○ ○	56 Ⓣ ◐ ○ ○ ○
7 Ⓣ ◐ ○ ○ ○	17 Ⓣ ◐ ○ ○ ○	27 Ⓣ ◐ ○ ○ ○	37 Ⓣ ◐ ○ ○ ○	47 Ⓣ ◐ ○ ○ ○	57 Ⓣ ◐ ○ ○ ○
8 Ⓣ ◐ ○ ○ ○	18 Ⓣ ◐ ○ ○ ○	28 Ⓣ ◐ ○ ○ ○	38 Ⓣ ◐ ○ ○ ○	48 Ⓣ ◐ ○ ○ ○	58 Ⓣ ◐ ○ ○ ○
9 Ⓣ ◐ ○ ○ ○	19 Ⓣ ◐ ○ ○ ○	29 Ⓣ ◐ ○ ○ ○	39 Ⓣ ◐ ○ ○ ○	49 Ⓣ ◐ ○ ○ ○	59 Ⓣ ◐ ○ ○ ○
10 Ⓣ ◐ ○ ○ ○	20 Ⓣ ◐ ○ ○ ○	30 Ⓣ ◐ ○ ○ ○	40 Ⓣ ◐ ○ ○ ○	50 Ⓣ ◐ ○ ○ ○	60 Ⓣ ◐ ○ ○ ○

61 Ⓣ ◐ ○ ○ ○	71 Ⓣ ◐ ○ ○ ○	81 Ⓣ ◐ ○ ○ ○	91 Ⓣ ◐ ○ ○ ○	101 Ⓣ ◐ ○ ○ ○	111 Ⓣ ◐ ○ ○ ○
62 Ⓣ ◐ ○ ○ ○	72 Ⓣ ◐ ○ ○ ○	82 Ⓣ ◐ ○ ○ ○	92 Ⓣ ◐ ○ ○ ○	102 Ⓣ ◐ ○ ○ ○	112 Ⓣ ◐ ○ ○ ○
63 Ⓣ ◐ ○ ○ ○	73 Ⓣ ◐ ○ ○ ○	83 Ⓣ ◐ ○ ○ ○	93 Ⓣ ◐ ○ ○ ○	103 Ⓣ ◐ ○ ○ ○	113 Ⓣ ◐ ○ ○ ○
64 Ⓣ ◐ ○ ○ ○	74 Ⓣ ◐ ○ ○ ○	84 Ⓣ ◐ ○ ○ ○	94 Ⓣ ◐ ○ ○ ○	104 Ⓣ ◐ ○ ○ ○	114 Ⓣ ◐ ○ ○ ○
65 Ⓣ ◐ ○ ○ ○	75 Ⓣ ◐ ○ ○ ○	85 Ⓣ ◐ ○ ○ ○	95 Ⓣ ◐ ○ ○ ○	105 Ⓣ ◐ ○ ○ ○	115 Ⓣ ◐ ○ ○ ○
66 Ⓣ ◐ ○ ○ ○	76 Ⓣ ◐ ○ ○ ○	86 Ⓣ ◐ ○ ○ ○	96 Ⓣ ◐ ○ ○ ○	106 Ⓣ ◐ ○ ○ ○	116 Ⓣ ◐ ○ ○ ○
67 Ⓣ ◐ ○ ○ ○	77 Ⓣ ◐ ○ ○ ○	87 Ⓣ ◐ ○ ○ ○	97 Ⓣ ◐ ○ ○ ○	107 Ⓣ ◐ ○ ○ ○	117 Ⓣ ◐ ○ ○ ○
68 Ⓣ ◐ ○ ○ ○	78 Ⓣ ◐ ○ ○ ○	88 Ⓣ ◐ ○ ○ ○	98 Ⓣ ◐ ○ ○ ○	108 Ⓣ ◐ ○ ○ ○	118 Ⓣ ◐ ○ ○ ○
69 Ⓣ ◐ ○ ○ ○	79 Ⓣ ◐ ○ ○ ○	89 Ⓣ ◐ ○ ○ ○	99 Ⓣ ◐ ○ ○ ○	109 Ⓣ ◐ ○ ○ ○	119 Ⓣ ◐ ○ ○ ○
70 Ⓣ ◐ ○ ○ ○	80 Ⓣ ◐ ○ ○ ○	90 Ⓣ ◐ ○ ○ ○	100 Ⓣ ◐ ○ ○ ○	110 Ⓣ ◐ ○ ○ ○	120 Ⓣ ◐ ○ ○ ○

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